

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
FACT SHEET TO MODIFICATION 2
PERMIT NUMBER CO0041467
CLIMAX MOLYBDENUM COMPANY, URAD SITE AND HENDERSON MINE
CLEAR CREEK COUNTY

TABLE OF CONTENTS

I. TYPE OF PERMIT.....	1
II. FACILITY INFORMATION	1
IV. CHANGES TO PERMIT	2
V. PUBLIC NOTICE COMMENTS.....	2

I. TYPE OF PERMIT

- | | |
|-------------------------|----------------------------------|
| A. Permit Type: | Modification 2 – Minor Amendment |
| B. Discharge To: | Surface Water |

II. FACILITY INFORMATION

- | | |
|------------------------------------|---|
| A. SIC Code: | 1061 (Ferroalloy Ore Mining except Vanadium) |
| B. Facility Classification: | Class B per Section 100.6.2 of the <u>Water and Wastewater Facility Operator Certification Requirements</u> |
| C. Facility Location: | Urad Mine site: T3S, R075W, Henderson Mine: T3S, R75W & R76W Latitude: 39° 45' 22" N, Longitude: 105° 49' 44" W |
| D. Permitted Features: | 005A- C, mining wastewaters treated in the combined mechanical wastewater treatment plant to Woods Creek, 39°45'22" N, 105°49'44" W
006A- C, mining wastewaters treated in the combined mechanical wastewater treatment plant to Woods Creek, 39°45'20.38" N, 105°49'25.23" W
007A (Internal Outfall), following disinfection and prior to mixing with the process water. 39° 46' 08 " N, 105° 51' 00 " W

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water. |

III. PURPOSE OF MODIFICATION

This modification is being completed in response to a permit modification request received on December 21, 2012 from the permittee. In the letter, the permittee requested that:

“TRC compliance monitoring can be performed either at outfall 007, under the conditions of the original draft permit, or TRC compliance monitoring can be performed at outfall 005/006, under the conditions of the current permit, once analytical interference issues have been resolved.

Justification:

As part of the review of the draft discharge permit, the Henderson Mine requested that the location for Total Residual Chlorine (TRC) compliance monitoring be changed from Outfall 007 (Henderson's domestic wastewater treatment plant [WWTP] effluent) to outfall 005/006 (URAD industrial water treatment plant [WTP] effluent). The rationale for this request was based on the chemical reaction between TRC and the manganese (Mn) present in significant concentrations in the flows originating within the mine workings. The mine dewatering flows would rapidly dechlorinate the WWTP effluent, without the necessity of adding a dechlorinating agent at the WWTP. A second component to the rationale was that the requested change would provide a mechanism for Henderson to purposefully dose additional chemical oxidant, sodium hypochlorite (TRC), via outfall 007 in the event that Mn concentrations in the mine dewatering flows exceeded the oxidative capacity of the URAD WTP, which can lead to operational (not compliance) problems.

The analytical method to determine compliance with the TRC effluent limitations was thought to be amperometric titration, which Standard Methods for the Examination of Water and Wastewater (Standard Methods) cites as being

unaffected by Mn interference. Secondly, the amperometric titration method has a lower practical quantitation limit (POL) than the DPD colorimetric method, which was required to quantify the low TRC effluent permit limitations for Outfall 005/006. However, the instrument O&M manual cites positive interference by Mn, in contradiction to Standard Methods. Analytical testing by Henderson personnel has confirmed this positive Mn interference. Sample pre-treatment methods to account for this interference have been attempted, but no resolution has yet been found. There have been no water quality effects, as the operational practice of dechlorinating the WWTP effluent has remained in place until the analytical methodology could be established.

Henderson requests a modification to its discharge permit to allow for TRC compliance monitoring either at outfall 007, under the conditions of the original draft permit, or at outfall 005/006, under the conditions of the current permit, once analytical interferences have been resolved.”

IV. CHANGES TO PERMIT

The Division recalculated the TRC values for outfall 007 using the same approach used previously for E.coli in the draft WQA (public notice version). The resulting chronic TRC values were 0.59 mg/l (Tier 1(Oct through May), 0.95 mg/l (June through July) and 0.74 mg/l (August through Sept). Similar results (> 0.5 mg/l) were obtained for the acute limitations. It should be noted that these figures are based on a design capacity of the WWTF of 0.04 MGD and the applicable assimilative capacities used for E.coli in the WQA. Based on these calculated limits, the Division will apply the Regulation 62 requirement of a daily maximum of 0.5 mg/l, as it is more stringent than the calculated limitations. This limitation will be effective when the facility does not use any additional chemical oxidant in the process. If any additional chemical oxidant is used then the limitation for outfalls 005/006 will be effective.

Kenan Diker
January 28, 2013

V. PUBLIC NOTICE COMMENTS